

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently amended) Line terminating device for a subscriber line which transmits and receives broadband signals via a single subscriber line, a broadband signal being composed of a broadband or narrowband audio-frequency voice signal and a broadband higher-frequency data signal and the frequency bands of the voice signal and of the data signal essentially not overlapping, having a digital frequency separating filter which separates the audio-frequency voice signal and the higher-frequency data signal from each other, said digital frequency separating filter being in the digital section of the line terminating device and having a first digital low-pass filter and a first digital high pass filter, said line terminating device having an analog/digital converter which converts a broadband received signal into a digital received signal, and a digital/analog converter which converts a digital transmit signal into a broadband transmit signal, and the digital frequency separating filter follows the analog/digital converter and precedes the digital/analog converter and separates the digital received signal into a first digital voice signal and a first digital data signal and combines a second digital voice signal and a second digital data signal to form the digital transmit signal[.] the first digital low-pass filter and the first digital high-pass filter being supplied with the digital received signal, the digital frequency separating filter having a second digital low-pass filter, a second digital high-pass filter and a digital adder, the second digital voice signal being supplied to the second digital low-pass filter, the second digital data signal being supplied to the second digital high-pass filter and the digital adder adding the output signal of the second digital low-pass filter and of the second digital high-pass filter to form the digital transmit signal.

Claim 2 (cancelled).

3. (cancelled)

4. (Currently amended) Line terminating device according to Claim [3] 1, characterized in that the first digital low-pass filter has a first series circuit of at least one first decimation filter and the first digital high-pass filter has a second series circuit of at least one second decimation filter .

5. (Currently amended) Line terminating device according to Claim[3] 1, characterized in that the second digital low-pass filter has a third series circuit of at least one first interpolation filter and the second digital high-pass filter has a fourth series circuit of at least one second interpolation filter .

6. (Previously amended) Line terminating device according to Claim 1, characterized in that the digital frequency separating filter has a noise shaper filter which follows a digital adder .

7. (Previously amended) Line terminating device according to Claim 1, characterized in that an oversampling sigma/delta analogue/digital converter is provided as analog/digital converter .

8. (Previously amended) Signal processing facility according to Claim 1, characterized in that a first digital low-pass filter , a first digital high-pass filter , a second digital low-pass filter and a second digital high-pass filter are designed as programs in a digital signal processor.

9. (Previously amended) Signal processing device according to Claim 1, characterized in that the analog/digital converter is preceded by an automatic gain control circuit for controlling the amplitude of the received broadband analogue signal.

10. (Previously amended) Signal processing device according to Claim 1, characterized in that the digital/analog converter is followed by a power cutback circuit for cutting back the power spectrum distribution.

11. (Previously amended) Line terminating device according to Claim 1, characterized in that the broadband audio-frequency voice signal is an ISDN voice signal and the broadband higher-frequency signal is an ADSL data signal.

12. (Previously amended) Line terminating device according to one of Claim 1, characterized in that the broadband audio-frequency voice signal is a POTS voice signal and the broadband higher-frequency data signal is ADSL data signal.

13. (Previously amended) Line terminating device according to Claim 1, characterized in that the digital frequency separating filter is designed with a number of channels, in which arrangement in each case audio-frequency POTS and/or ISDN voice signals and broadband higher-frequency ADSL data signals can be transmitted via the multiplicity of channels.

14. (Previously amended) Line terminating device according to Claim 1, characterized in that the digital frequency separating filter has an echo canceller which is arranged both between an upstream signal path and a downstream path .

15. (Currently amended) Line terminating device according to Claim 14, characterized in that the echo canceller [EC] is provided for coarse correction and filters out an interference signal fed back by the digital frequency separating filter [~~9; 207—212; 605~~].

16. (Previously amended) Line terminating device according to Claim 14, characterized in that the echo canceller in the digital frequency separating filter can only be trained with a common operation of audio-frequency voice signal and higher-frequency data signal .

17. (Previously amended) Line terminating device according to Claim 14, characterized in that the interfaces to the transceiver circuits for the audio-frequency voice signal and higher frequency data signal and/or the transceiver circuits themselves have in each case at least one further echo canceller which is used for fine correction of the interference signal set back in each case.

18. (Previously amended) Line terminating device according to Claim 1, characterized in that in the digital frequency separating filter for separating the audio-frequency voice signal from the higher-frequency data signal , a low-pass filter circuit is provided which contains a sampling rate decimator and a pulse shaper following the latter and which is connected via an interface to a transceiver suitable for processing audio-frequency voice signals .

19. (Previously amended) Line terminating device according to Claim 1, characterized in that, in the digital frequency separating filter, a further low-pass filter circuit is provided which contains an upstream pulse shaper and a sampling rate integrator and which is connected via an interface to a transceiver suitable for processing audio-frequency voice signals, the low-pass filter circuit providing at its output the audio-frequency voice signal which is superimposed on the higher-frequency data signal.

20. (Previously amended) Line terminating device according to Claim 1, characterized in that the digital frequency separating filter, together with a transformer, a line driver circuit, and a coded circuit, are integrated on a single chip.

21. (Previously amended) Line terminating device according to Claim 1, characterized in that the digital frequency separating filter has at least one sampling rate adaptation stage and a clock synchronization unit which ensures that the sampling rates of the respective signal streams are equal magnitude at the summation point and at the splitting point.